

where both of the non-bridging oxygens are substituted with sulfur; phosphoroamidites; alkyl phosphotriesters and boranophosphates. Achiral phosphate derivatives include 3'-O'-5'-S-phosphorothioate, 3'-S-5'-O-phosphorothioate, 3'-CH₂-5'-O-phosphonate and 3'-NH-5'-O-phosphoroamidate. Peptide nucleic acids replace the entire ribose phosphodiester backbone with a peptide linkage. Sugar modifications are also used to enhance stability and affinity. The α -anomer of deoxyribose may be used, where the base is inverted with respect to the natural β -anomer. The 2'-OH of the ribose sugar may be altered to form 2'-O-methyl or 2'-O-allyl sugars, which provides resistance to degradation without comprising affinity. Modification of the heterocyclic bases must maintain proper base pairing. Some useful substitutions include deoxyuridine for deoxythymidine; 5-methyl-2'-deoxycytidine and 5-bromo-2'-deoxycytidine for deoxycytidine. 5-propynyl-2'-deoxyuridine and 5-propynyl-2'-deoxycytidine have been shown to increase affinity and biological activity when substituted for deoxythymidine and deoxycytidine, respectively.

Please enter the amendments to the paragraph beginning on page 43, line 29 to page 44, line 29, as follows:

Further examination of the H4 contig revealed that a long open reading frame encoding a novel member of the galactose/GlcNAc/GalNAc 6-O-sulfotransferase family of enzymes (GST family) is present in H4 at positions 98474-99661. The enzyme encoded by this long (1188 bp) ORF is predicted to be a typical type two transmembrane protein of 395 amino acids with 85.6 % identity and 87.4 % similarity on the amino acid level. The putative gene product was therefore termed GST-4 α to highlight its similarity to GST4 the latter being referred to henceforth as GST-4 β . In order to address the question, whether GST-4 β is being expressed in vivo, we searched the Genbank and LifeSeq EST database for matching expressed sequence tags (ESTs). We found two matching ESTs (accession number AI824100 from Genbank, and clone #6869651 from LifeSeq). Plasmids containing both sequences were retrieved and sequenced in full. AI824100 was found to contain the GST-4 β ORF from its start ATG through a Not I site (GCGGCCGC) at position 795 of this ORF. In addition, this plasmid contained 188 bases of GST-4 β 5'UTR. Incyte clone #6869651 contained the GST-4 β ORF from the Not I site at position 795 of the ORF through the stop-codon (TAG) and additional 307 bp of 3'UTR. A [GST4 \square] GST-4 β cDNA constructed from these two ESTs is presented in sequence 3. This sequence was mapped back against the contig H4. It was thus found that the GST-4 β ORF along with 17 bp of